

Department of Food Science

Food Processing

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Refrigerated Foods: Some Rules for Processing

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Refrigerated foods are usually preserved by maintaining low temperatures, but the FDA recommends other hurdles to prevent bacterial growth such as low water activity or pH below 4.6.

- Because refrigeration is the preserving condition, the product must be kept below 41°F at all times. Ideally, keep products in a refrigerator, that is, between 33-38°F. Colder temperatures (below 41°F) increase shelf life.
- The manufacturer must ensure the food does not contain harmful microorganisms. Selection of high quality raw materials is the first step in ensuring this.
- Secondly, all refrigerated foods should have a terminal heat treatment, if possible. Foods must be heated to above 180°F in the container to destroy harmful microorganisms. The product should then be protected from recontamination and cooled to below 70°F within two hours and to below 40°F within the next four hours.
- For products which cannot be given a terminal heat treatment, ingredients which can be pasteurized or heated to 180°F described as above, should be. Products which will not have a terminal heat treatment should be combined only from pre-chilled (below 40°F) ingredients.
- Any exposure to the environment after pasteurization, such as opening the container, insanitary containers or utensils, or contact by a person, can recontaminate and spoil the product.
- Clean all utensils and containers contacting the product with warm soapy water (above 120°F), rinse, then sanitize in a solution of two tablespoons chlorine bleach per gallon of water (approximately 100 ppm chlorine).
- Some products benefit from the use of preservatives. Sodium benzoate or potassium sorbate at levels of 0.1% each, can be added to products with a pH below 5. This will retard mold and yeast development, but will have little effect on bacteria.
- Good personal hygiene is a must. Ill workers must be excluded from food handling, as must those with infected cuts or sores. Proper handwashing is the best barrier to disease spread from other humans. Workers should bathe daily, shampoo, and wear clean clothes. Avoid contact with pets before handling food products.
- Refrigerated foods should be packaged in rooms with positive pressured with filtered air. The room should be as cool as possible and everything in the room should be cleanable. Traffic should be kept to a minimum and unauthorized persons should be excluded. Extra equipment and supplies should be stored elsewhere.